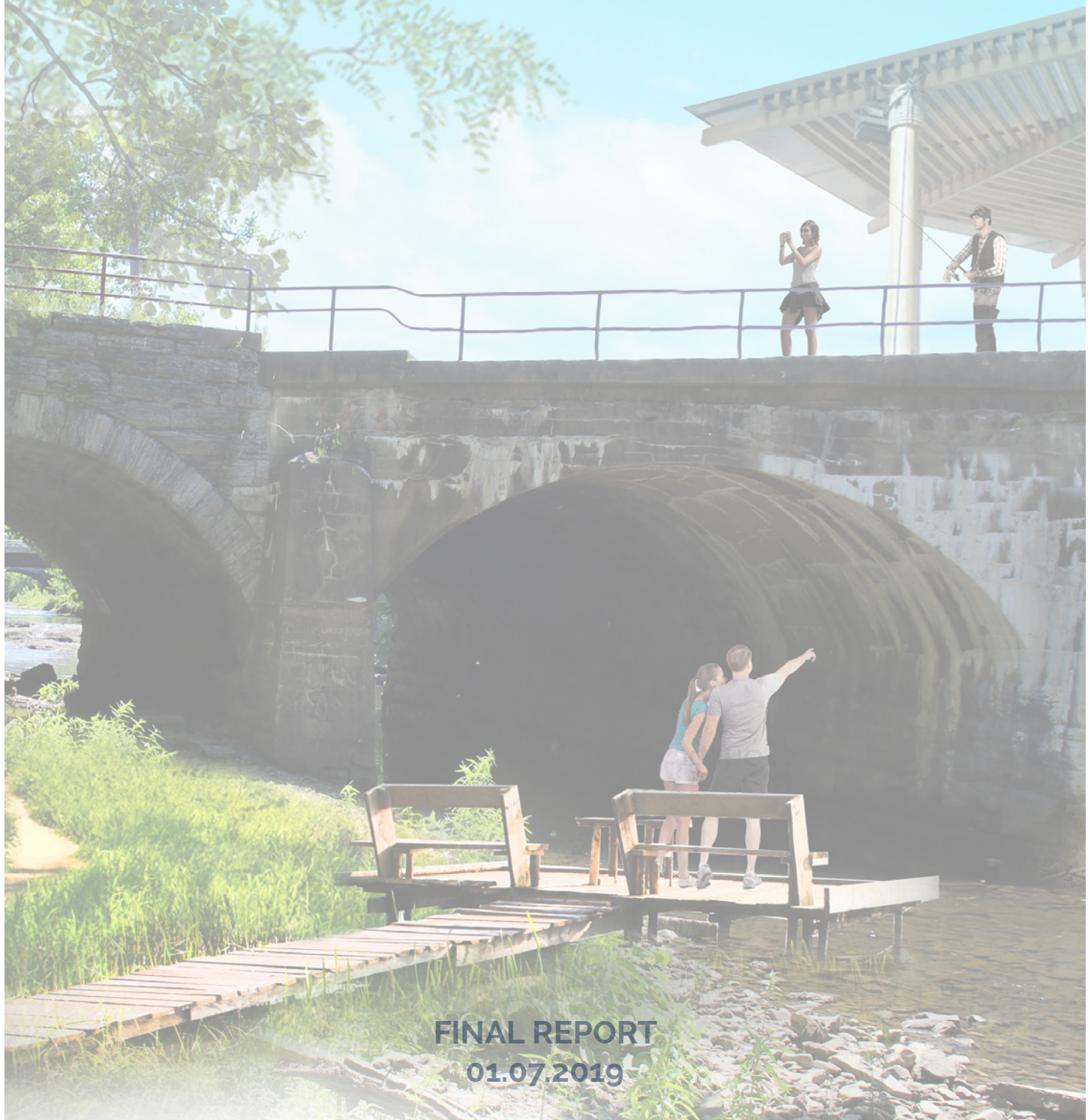


Troy and Poestenkill Green Infrastructure Study



FINAL REPORT
01.07.2019

Troy and Poestenkill Green Infrastructure Study

Table of Contents:

1	Executive Summary	page 4
2	List of Participants	page 5
3	A Brief Description Of Troy & The Poestenkill Creek	page 6
4	Visioning Workshop Methodology	page 8
5	The Sites	page 12
6	Workshop & Study Results	page 34
7	Conclusions and Recommendations	page 66
Appendix 1 Grant List		Page 68



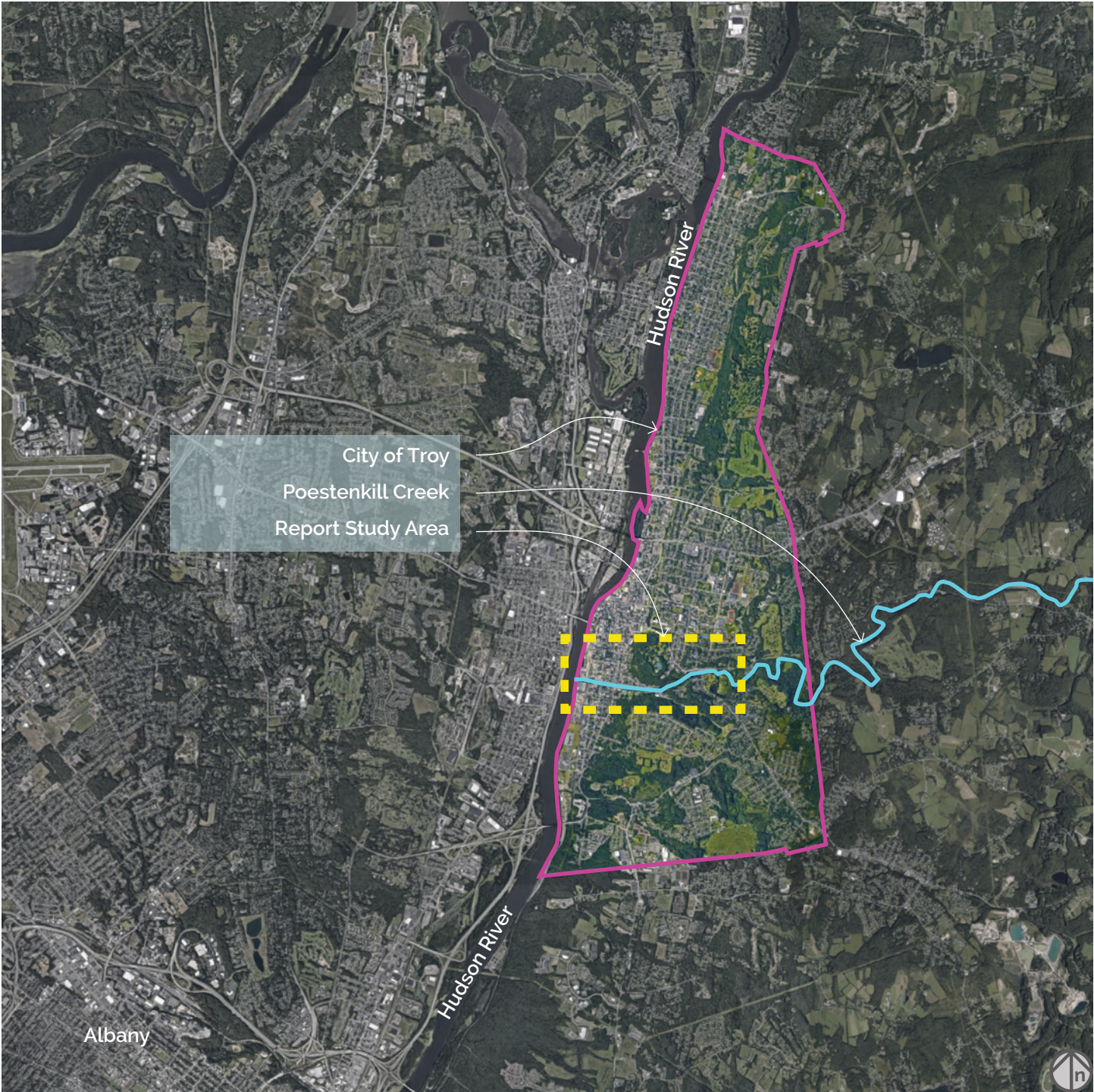
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All images and photographs were produced by Apiary Studio
Design Renderings were produced by Griffin Voigt under the direction fo Apiary Studio

The workshop and this report were prepared for NYS Water Resources Institute at Cornell University and the NYS Department of Environmental Conservation Hudson River Estuary Program, with support from the NYS Environmental Protection Fund.

1 EXECUTIVE SUMMARY

This report explores opportunities for developing publicly accessible open spaces and green infrastructure measures within the Poestenkill Creek watershed in the City of Troy, NY. During the Summer of 2018, a consultant team was tasked with organizing a planning charrette for Troy stakeholders to identify sites along the Poestenkill that could be redesigned to achieve four primary goals: 1) improve local water quality, 2) reduce flooding impacts, 3) restore ecological systems and 4) improve public access to open space along the Poestenkill waterfront. This report identifies sites and design solutions along the Poestenkill that resulted from the community design process; it is intended to be used as a framework for seeking public and private funding to implement the priority projects identified by stakeholders.



2 LIST OF PARTICIPANTS

Consultant Team:
Hans Hesselein, Apiary Studio, Team Lead, Landscape Architect
Brian Davis, Assistant Professor, Landscape Architecture Department, Cornell University
George Fowler, Water Resources Engineer, Princeton Hydro

Participating Groups
City of Troy: Monica Kurzejeski, Deputy Mayor
City of Troy: Anasha Cummings, City Councilmember
City of Troy: Steve Strichman, Commissioner of Planning & Economic Development
City of Troy: Tyler Holloway, Recycling Coordinator
The Narrows: Cascade & Heritage Trail
Rensselaer Land Trust
TAP, Inc
Capital District Regional Planning Commission
NYSDEC Hudson River Estuary Program
Cornell University
Skidmore College
Community Members At Large



Workshop participants during site tour at Mt Ida Falls in Poestenkill Gorge Park.

3 A BRIEF DESCRIPTION OF TROY & THE POESTENKILL CREEK

Troy, NY is a bucolic, post-industrial city that is situated on the dramatic terrain of the Hudson River's east bank, just northeast of the capital city of Albany. The story of Troy is analogous to so many American cities that prospered during the early industrial revolution, producing steel and textiles in the 19th and early 20th centuries, until it saw its factories and population drop precipitously as the heavy industries consolidated, moved south and then largely left America as globalization took hold.

Troy is a diverse community, with residents self-identifying as 66% caucasian, 16% African American, 9% latino, 4% Asian American and 5% other¹. The median household income is \$39,847, significantly below the NY state average, with approximately 25% of city residents living at or below the poverty line². The New York State Department of Environmental Conservation (NYSDEC) has identified several potential environmental justice areas within the City of Troy, some of which are located near the Poestenkill in the neighborhood of South Troy³. As demonstrated later in this report, these communities also lack access to high quality, publicly accessible green spaces and public parks. The population has dropped by more than 1/3 from its peak at 76,000 in 1910, to approximately 50,000, where it stands today.

While the number of citizens have declined, Troy is fortunately blessed with an abundance of resources in the form of architecturally significant building stock, is part of the economic engine of the Capital Region, it has a high quality of life and low cost of living, renowned higher education institutions, dramatic natural terrain and extensive frontage along one of America's most important and celebrated waterways, the Hudson River.

One of the more significant Hudson River tributaries that flows through Troy is the Poestenkill Creek, which runs from its upland headwaters in Rensselaer County, through farmlands and suburbs that sit above and to the east of Troy. Once the Poestenkill enters Troy, it is altered by a series of historic dams intended to power early industrial activity. Midway through Troy, the creek descends the face of a dramatic escarpment that runs parallel to the Hudson, north/south through Troy. In this steep zone one can hike to and experience the remarkable "High Falls" that sit between Prospect & Gorges Parks. Below the falls, the Poestenkill terrain flattens out and the creek has been straightened and canalized to run through the historic residential and industrial sections of the city before joining the Hudson.

Troy does, however, have issues with the ways in which it treats and manages its stormwater and is currently working towards achieving improved local water quality in the Hudson and its tributaries. According to the Albany Pool Long Term Control Plan (2011), the Poestenkill has elevated levels of fecal coliform bacteria⁴, especially following rain events, as well as low dissolved oxygen levels⁵ and elevated water temperatures. Stormwater that lands on local streets picks up debris and pollutants and receives no pretreatment before flowing into curbside catch basins. This runoff is mostly transported through the combined sewer system that overflows into the Hudson when inundated, carrying sewage as well as the debris washed in from local streets. Despite these concerns, the Poestenkill is a beautiful stream that is an extremely popular local fishing destination, played an important role in the community's historic development and has potential to serve as a regional



asset for recreation, sight-seeing and wildlife habitat connectivity.

This report builds on state-level planning such as the Albany Pool Long Term Control Plan (LTCP), the work of stakeholder initiatives like the proposed Narrows Project trail network, local planning studies like the Realize Troy Comprehensive Plan, as well as the feedback garnered in the Poestenkill-specific green infrastructure visioning charrette that was organized on June 18, 2018. Combining these initiatives, the report focuses specifically on the potential to transform landscapes along the Poestenkill Creek into more sustainable sites that support the needs of local residents and wildlife populations.

1 US Census Bureau, <https://www.census.gov/quickfacts/fact/table/troycitynewyork/PST045217>
2 US Census Bureau, <https://www.census.gov/quickfacts/fact/table/troycitynewyork/PST045217>
3 https://www.dec.ny.gov/docs/permits_ej_operations_pdf/rensselaerej.pdf
4 LTCP, P. 5-35, 2011
5 LTCP, P. 2-25, 2011

4 VISIONING WORKSHOP METHODOLOGY

The workshop and this report are intended to complement the existing work of local stakeholders, public agencies and previous planning reports in order to lay out a vision for investing in green infrastructure along the Poestenkill's banks within the city limits of Troy. The Albany Pool Long Term Control Plan and the Realize Troy Comprehensive Plan were both consulted in the development of the workshop's objectives and many of the same stakeholders also participated in the Comprehensive Plan's development. The workshop was organized to produce outcomes focused on ideas that would 1) improve local water quality, 2) reduce the impacts of local flooding, 3) restore ecosystem functioning and 4) improve public access to the Poestenkill. The workshop with Troy stakeholders was held on June 18, 2018, and was attended by over 16 individuals.

In preparation for the workshop, the Design Team conducted geospatial analyses of the Poestenkill watershed, identifying sites with the greatest potential for achieving the goals identified above. Sites were prioritized based on whether they had frontage along the creek, were publicly owned or could be relatively easily purchased, experienced flooding and were relatively undeveloped. The Design Team then reviewed the list of potential sites with representatives from the city Office of Planning & Economic Development, TAP, Inc and the Narrows Project in order to select the best areas for exploration in the community workshop. This resulted in five study areas listed in order from west to east: 1) Hudson Waterfront, 2) Industrial Zone, 3) Canal Banks, 4) Poestenkill Gorge and 5) Ida Lake.

Morning Site Visits

The workshop was held at the offices of TAP, Inc, where participants met at 9:00am. After welcoming the attendees and introducing them to the workshop's agenda: to understand how to focus and prioritize future green infrastructure investment along the Poestenkill. The Design Team also explained how the sites were selected with input from TAP, Inc, the Narrows Project and the Troy Office Planning & Economic Development, and that participants would reconvene at the office later that afternoon for sketching and brainstorming. The participants dispersed as a group and spent the morning walking each site, discussing their inherent opportunities, constraints and sharing local knowledge about each location. By visiting all of the sites together as a group, participants were able to experience first-hand, the qualities that make each location unique. Many of the participants also shared anecdotes, observations and bits of local lore that helped to differentiate the areas of the Poestenkill and expose their individual attributes.

Site Evaluation Survey

Following the site tours, the group met back at TAP, Inc's offices and completed a questionnaire for each site, which helped to prioritize where interventions should be focused and investments made. The questionnaire was the same for each site, and participants were asked to complete a survey for all of the five proposed sites they visited that morning, allowing the Design Team to understand and evaluate how stakeholders felt about the different locations in terms of their cultural, ecological and hydrological risks and values. The survey did not seek to capture expert-produced quantifiable information about the sites, but rather to gauge the perceptions of stakeholders regarding what they saw as assets and liabilities along the Poestenkill. The survey was broken down into eight categories that are described below:

- 1. *Flooding* - The Poestenkill is a tidal tributary to the Hudson that experiences daily fluctuations in water level at its lowest reaches. Portions of the Poestenkill are also subject to flooding during storm events, which may be exacerbated by upland development and agricultural practices. This question sought to determine whether participants associated a site with regular or infrequent

flooding. The perception of more persistent and problematic the flooding at a site would increase its score and help prioritize investment. A score of 5 represented a high priority site to address flooding issues and a score of 1 implied that addressing flooding was a low priority in that location. The responses do not reflect actual measured and documented flooding, but the stakeholder perception that it may be an ongoing issue in each area.

- 2. *Water Quality* - This metric was intended to gauge the perceived impediments to water quality for a section of the Poestenkill and whether the site in question was contributing to impediments in the waterway. If the site was seen as contributing negatively towards water quality issues, it was ranked more highly so that it could be prioritized for investment. Conversely, a site that was seen as having little to no effect on water quality was assigned a lower weighted score. A ranking of 5 implied that the site had high potential to beneficially impact water quality if investments were made, while a score of 1 indicated that changes to the site are unlikely to appreciably improve water quality in the Poestenkill. The water quality score assigned to each site is not based on quantitative site analysis or stormwater modeling, but rather, on stakeholder perceptions and experience.
- 3. *Presence of Crime* - This question sought to determine whether stakeholders felt comfortable or safe in proximity to each site. Safer spaces were ranked higher (5), while areas that were perceived as unsafe were ranked lower (1). With limited resources available to implement projects, the Design Team felt that it would be wise to focus improvements in areas that are likely to be used more frequently as a result of the perception of security. Further discussion with neighbors of each site could provide more definitive information about actual site safety issues and the perceptions of immediate neighbors.
- 4. *Public Use* - Each site is currently used by the public to varying degrees and this metric sought to determine which ones represented the greatest current asset in the public's eyes based on perceived frequency of use. Sites that were seen as used frequently by community members received a higher score (up to 5) and sites that were used less frequently scored lower (down to 1). With all other factors being equal, sites that are currently used more were prioritized for enhancement.
- 5. *Public Access* - This metric explored the relative ease or difficulty in accessing each site. Sites that have greater accessibility challenges scored lower (down to 1) and sites that could more easily accommodate a universal population were scored higher (up to 5).
- 6. *Public Proximity* - This metric sought to gauge the proximity of each site to communities it might serve. Sites that were located in denser areas, or closer to environmental justice communities¹ received higher scores (up to 5) and sites that were more removed from the public received lower scores (down to 1).
- 7. *Ecology & Natural Heritage* - The city of Troy is located on a bucolic section of the Hudson, with sections of steep topography, dramatic terrain and remarkable natural features. This metric gave higher scores (up to 5) to sites with more compelling natural features and lower scores (down to 1) for sites that were perceived as being more common.
- 8. *History & Culture* - This metric sought to understand the perceptions of participants related to whether the sites had interesting stories, contributed to the region's historic development or otherwise offered cultural resources to the surrounding communities. Sites that participants felt contained significant historic features or elements scored higher (up to 5) and sites that were less historically or culturally significant scored lower (down to 1).

1 Environmental Justice (EJ) communities are defined and mapped by the New York State Department of Environmental Conservation (NYSDEC). More information about the NYSDEC mapping process and how EJ communities are defined can be found here: <https://www.dec.ny.gov/public/g11.html>

Participants were asked to score each of the 8 categories with a rank from 1-5. The surveys were then tallied for each site and each participant's total site score was calculated. The individual responses as well as the total site score were then inputted into a spreadsheet and overall average scores were calculated for each site as well as each individual category. The survey template is displayed below, with the findings described in the Workshop Results section of this report:

Survey Template:

Existing Conditions and Public Perceptions (complete BEFORE design charrette)

#	Metric Description	High Priority (5)	Medium Priority (3)	Low Priority (1)	Score:
1	Flooding	The site experiences regular and problematic flooding	The site experiences intermittent flooding that causes some problems	The site rarely or never floods and it is not a problem	
2	Water Quality	Runoff from this site or nearby properties has caused pollution or sedimentation of the Poesten Kill	Runoff from this site or nearby properties has caused some pollution or sedimentation of the Poesten Kill	Runoff from this site or nearby properties has caused little to no pollution or sedimentation of the Poesten Kill	
3	Presence of Crime	The site is very safe and comfortable for members of the public to visit	The site has some crime issues and feels only moderately safe	The site attracts criminal or antisocial behavior regularly and is dangerous to visit	
4	Public Use	The site is used frequently by Troy residents	The site is sometimes used by Troy residents	The site is rarely used by Troy residence	
5	Public Access	The site is easy to access for members of the public	The site is moderately accessible to members of the public	The site is very difficult to access by members of the public	
6	Public Proximity	This site is located near communities that would like to have access to it for recreation	This site is located somewhat close to communities that would like to have access to it for recreation	This site is located far from communities that would like to have access to it for recreation	
7	Ecology & Natural Heritage	This site has significant natural areas worthy of preservation	This site has some natural areas that should be preserved	This site has little to no existing ecology to protect and preserve	
8	History & Culture	This site has significant historic or cultural value to local residents	This site has some historic or cultural significance to local residents	This site has little to no relevant history or cultural value to local residents	
				TOTAL SCORE:	



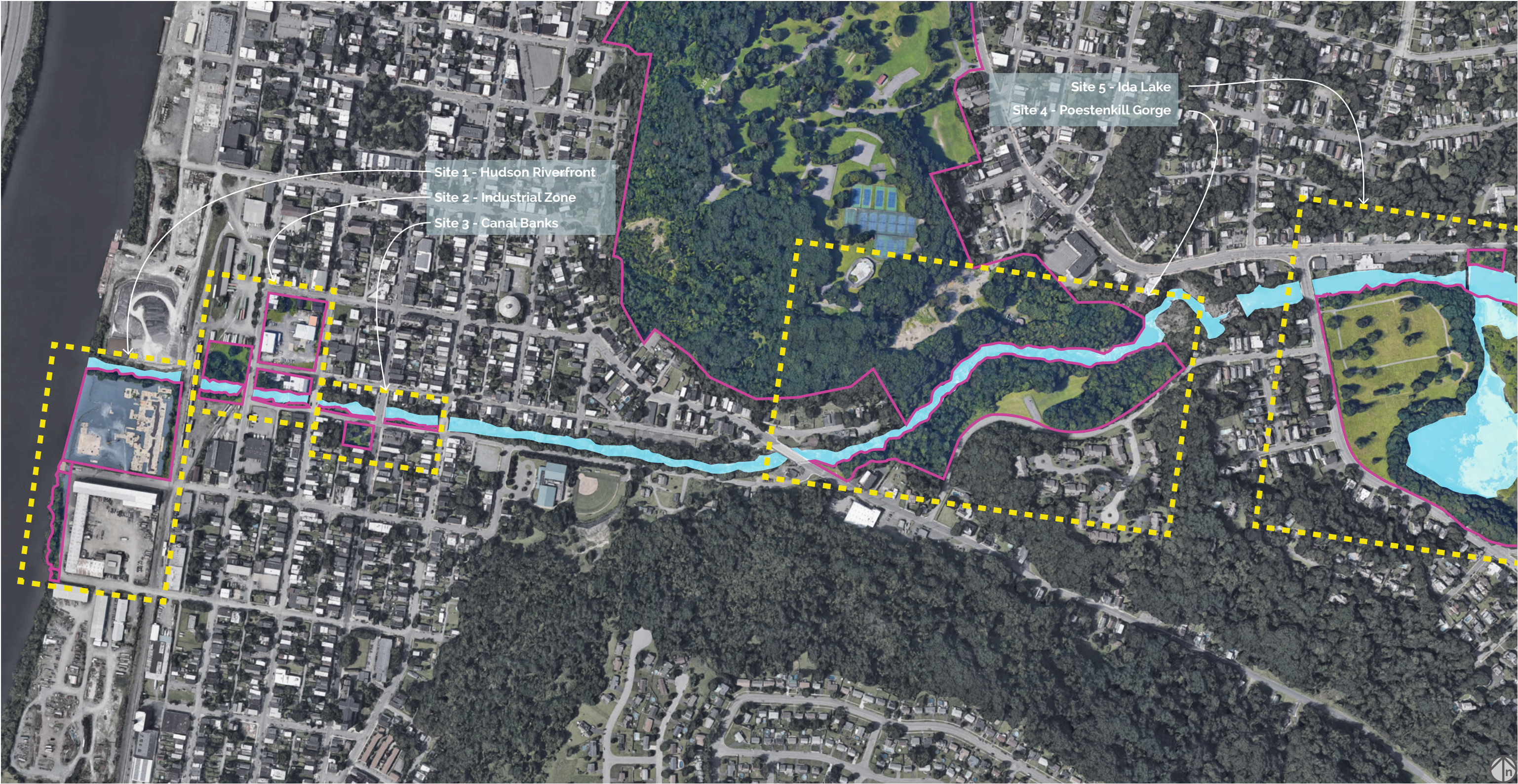
Charrette sketches

Design Charrette

For the design charrette, stakeholders separated themselves into two approximately equally-sized groups so that each could creatively explore a sampling of sites in detail; participants generally divided up based on which sites the stakeholders were more familiar with and passionate about. Brian Davis facilitated the design exercise with Group 1, which focused on the more urban and lowland Sites: The Hudson River Front, The Industrial Zone and the Canal Banks. Hans Hesselein facilitated Group 2, which focused on the more upland sites, which included: Poestenkill Gorge and Ida Lake. George Fowler floated between both groups, offering feedback on feasibility as well as the ecology and engineering perspective on the design solutions being discussed. The groups explored each site for approximately 45 minutes to one hour, by first discussing positive and negative aspects of each location, drafting a program list for what types of activities and amenities should be incorporated into a design and then finally, the teams sketched rough concept plans for each of the sites. The information discussed and incorporated into the siteplans was the result of the field visits and discussions held among stakeholders throughout the day. The outcomes of the design charrette are described in the Workshop Results section in list and narrative form as well as through the conceptual siteplans in this report.

5 THE SITES

This section describes the existing conditions and potential of each site. The narrative below has been generated by analyzing information from a variety of sources, including geospatial analysis, historic research and community input.



Site 1 - Hudson Riverfront

The Hudson Riverfront sites encompass the mouth of the Poestenkill Creek at its confluence with the Hudson. On the north side of the Poestenkill is a large road salt storage facility that is open and exposed to the elements. The south side of the Poestenkill is bordered by a large city-owned tract (Scolite Site) that is a recently remediated former Ironworks, and is currently awaiting redevelopment. This neighborhood is characterized by extensive brownfields and historic industrial activity. In the Realize Troy Comprehensive Plan, this area is slated to become the Monroe District, with reinvestment focusing on knowledge-based employment such as technology, innovation and advanced manufacturing. The City of Troy is in the process of negotiating with the salt company in order to relocate the facility to a site that is better suited for storing salt and receiving truck traffic. This area is slated for mixed-use development in the future, as described in the Comprehensive Plan.

The Hudson River frontage for both the salt storage and Scolite sites represents the southernmost location of a hard bulkhead in Troy that is suitable for mooring large ships. The salt storage site has an improvised bulkhead along the Poestenkill that is built from a mixture of stone and steel sheet piles, the Scolite site has a steel sheet pile bulkhead along the Poestenkill and a concrete bulkhead along the Hudson River. South of the Scolite site is a public street-end parklet called the Madison Street Pier, which was built using New York State Environmental Protection Funds and is one of the most popular public fishing destinations along the Hudson River in the region. South of the Madison Street Pier, the waterfront has a soft edge of rubble, debris and scrubby volunteer vegetation consisting of a mixture of native and invasive plant species. One of Troy's largest combined sewer overflow (CSO) outfalls (CSO-039) is located beneath the Madison Street



Pier and releases approximately 11.8 million gallons per year of CSOs into the Hudson River¹. One block south, CSO-040 releases approximately 2.3 million gallons per year from the Monroe Street End.²

The site south of the Pier is owned by Valente Materials Group as an equipment storage and repair facility. The company has a parking lot located between their building and the waterfront and there is potential for the City of Troy to negotiate an agreement with Valente that would allow for public access to the waterfront bordering their large industrial tract.

The Hudson Riverfront site is a great location for achieving half of the goals identified at the beginning of this report, in particular: goal 3: to improve ecological functioning and goal 4: to enhance public access to the banks of the Poestenkill. By restoring native flora to the soft edge of the Hudson River on the Velente site, Troy could improve riparian wetland and woodland habitat. Additionally, there are significant public access enhancement opportunities presented by the fact that this site borders both the Poestenkill and Hudson River.

1 LTCP, P. 5-21, 2011
2 LTCP, P. 5-21, 2011



Madison Street Pier, a popular regional fishing location with views across the Hudson.



The mouth of the Poestenkill as it enters the Hudson. Taken from the northwest corner of the Scolite site.



CSO outfall 040 near the Valente Materials Group facility @ the end of Monroe Street.



Hudson waterfront along the Valente Materials Group parking lot between Monroe & Madison Streets.



Concrete bulkhead @ the remediated Scolite site. Photo taken looking north from the southwest corner of the site.

Site 2 - Industrial Zone

This area of the Poestenkill is currently dominated by large open spaces, trailer parking, construction debris and freight rail lines. In the Realize Troy comprehensive plan, this area will become the northern edge of the Monroe District and the central hub of a new transportation network. The city plans to create a new South Troy Industrial Access trucking route alongside the rail easement and build a new commuter rail station on top of a freight depot on the south side of the Poestenkill. The banks of the Poestenkill are characterized by a mixture of wood crib walls on the south side, with a softer, rubble and tree-filled banks on the north side. The Madison Street Bridge also serves as a very popular fishing location during Herring and Striped Bass runs, when sport fishers will cast directly into the creek below. The bottom of the Poestenkill is a mixture of gravel and bedrock, with opportunities for fish and eel habitat enhancement. The northwest corner of this zone, that is currently used for trailer parking, would be an ideal location for a soft, natural waterfront within public green space. With a rail station proposed directly across the Poestenkill to the south, there are significant opportunities for a coordinated investment in civic infrastructure here. A multifamily residential development is planned one block north of the Poestenkill, the residents of which will require nearby open space and park amenities and could offer a public/private partnership opportunity to invest in Poestenkill restoration projects. The charrette participants broadly favored coordinating investment in nearby open space between the city and the private developer.

This site provides ample opportunities to achieve several of the project's goals, including 1) improve local water quality, 3) restore ecological systems and 4) improve public access to open space along the Poestenkill waterfront



View of Poestenkill & rail bridge; rubble "beach" area on right-hand (north) side.



View of Rail bridge and rubble "beach" from water level.



Looking east up the Poestenkill from the popular fishing bridge on 1st Street.



Unforested portion of underutilized vacant lot; part of trailer parking site.



View towards triangular unused rail spur from popular fishing bridge on 1st Street.



View down to creek bed from unused rail spur, looking north.

Site 3 - Canal Banks

This narrow, linear portion of the Poestenkill runs through the dense residential district of South Troy. This is also the most highly-altered section of the creek, which was historically straightened and channelized in order to serve as a shipping channel and raceway for the many mills that were once powered by the Poestenkill and gave rise to Troy's great productivity and wealth during the 19th Century. The northern banks of the Creek are mostly private residential parcels with historic stone bulkheads. The south bank is a sheer concrete wall with chain-link fencing that separates the canal itself from Canal Avenue, which is a quiet, one-way street that is infrequently used by cars and could serve as a pedestrian-friendly waterfront esplanade along the Poestenkill. There is a popular public playground at the corner of Canal Ave and 3rd Street, which is in need of upgrades and repairs. The bottom of the Canal in this area is mostly gravel bars and bedrock, which could be enhanced to improve fish spawning habitat.

The public spaces within the Canal Banks zone have the potential to help achieve three of the four project goals: 1) improve local water quality, 3) restore ecological systems and 4) improve public access to open space along the Poestenkill waterfront



The community park and playground, which cold benefit from updated equipment.



View of the Poestenkill canal and concrete bulkhead that borders Canal Ave adjacent to the Playground, looking west.



View east along Poestenkill canal from 3rd Street bridge. The canal has a gravel base w/ volunteer vegetation.



Looking west from the 2nd Street bridge with a view of an old industrial building on the right.



View of Canal Ave, looking east towards the community park and playground.



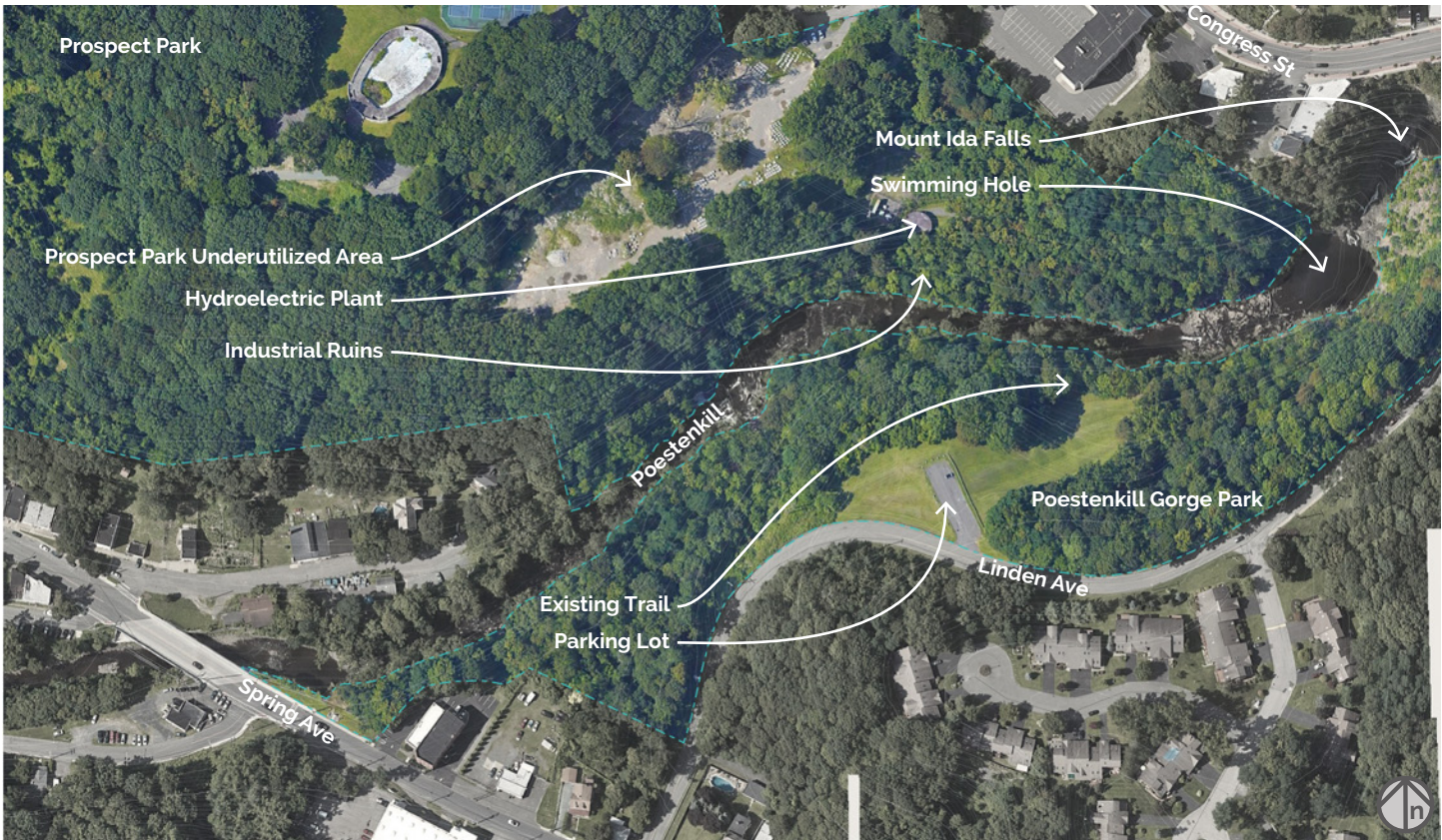
The strip of land between the bulkhead and Canal Ave guardrail is overgrown but could accommodate pedestrians.

Site 4 - Poestenkill Gorge

Mount Ida Falls at Poestenkill Gorge is Troy's most stunning and unique natural feature. The falls are situated in a narrow, rocky gorge and drop more than 175 feet¹ in a series of dramatic cascades that attract sightseers, swimmers, sport fishers and hikers, despite the difficult challenge of poor access. The Falls are located on the border between Poestenkill Gorge Park and Prospect Park. Prospect Park is the city's most popular green space, designed in a classic English picturesque style with meandering walking paths, picnic pavilions, sports courts, and open areas mixed with woodlands and mature trees. The park sits above the city of Troy, with majestic views across the urban landscape and Hudson River. Within Prospect park, above the Poestekill Creek is a city-owned underutilized portion of the park, which could easily be converted into a more dynamic public space. There is also a small 2.9 MW hydro-electric power station operated by a private company above the gorge. An easement through the power plant property to access Mount Ida Falls is the most practical solution for an accessible route from the uplands down into the creek bed.

Poestenkill Gorge Park is located across the creek from Prospect Park and the power station. It consists of a small parking lot off Linden Avenue, that lets out into an open lawn field with a woodland path down the banks of the gorge to the Falls. Unfortunately, the path terminates in a public lookout deck that was destroyed by vandalism. The path is blocked, but intrepid citizens scramble down the remaining 15 feet of gorge banks to access the dramatic bedrock-scape and swimming hole at the foot of Mount Ida Falls. From here, the Poestenkill careens downstream through a boulder and industrial ruin-filled canyon until it eventually enters the Canal about 0.3 miles below. These wonderful natural features are contrasted by the sublime ruins of former industrial facilities, which speckle the creek banks and constitute a collection of cultural artifacts, some of which could and should be preserved and interpreted. The Poestenkill Gorge areas represent some of the City's greatest cultural and natural features waiting to be explored, but also present some of the greatest accessibility challenges because of the dramatic slopes down to the Falls.

¹ <https://digthefalls.com/poestenkill-falls-park-mount-ida-falls-troy/>



The two parks and adjacent underutilized spaces that border the Gorge & Falls are great sites for pursuing project goals 1) improve water quality (with upland green infrastructure measures), 3) restore habitat (through native restoration plantings) and 4) improve public access to the Poestenkill (through a formal hiking and bicycle trail network).



The Poestenkill Gorge is a rock boulder-scape with pools & riffles in this section.



View of Mt Ida Falls & swimming hole.



Industrial ruins along the creek.



View down towards hiking trail and Poestenkill creek from Gorge Park parking lot.



Underutilized area of Prospect Park.



Small, privately-operated hydroelectric plant.

Site 5 - Ida Lake

The Ida Lake area is situated above Mount Ida Falls and is formed by a timber plank dam, which holds a small forested lake that attracts many species of birds and wildlife. The lake is largely filled-in from upstream sediment sources, but it is one of the only public boat access points to the Poestenkill above the Falls. The site is a large city-owned historic cemetery that borders Pawling Avenue on one side and Ida Lake on the other. Mount Ida Cemetery is mostly an open gravestone area with wooded north and east-facing slopes that lead down to the creek on the north side and the lake on the east, where community members can drive to a parking area and informal boat launch through a wetland. This is a popular up-stream fishing destination for many sports fishers. Nutrient loading occurs in the Creek during warmer months, which causes algal blooms on the lake. Participants felt that further study is warranted in order to determine the possible benefits that could be gained in improved water quality, wildlife habitat and flood control if the timber dam were to be removed. Across the lake is a small public space called Eagle Park, which was built by boy scouts and contains a shady lawn area with a flag pole and benches as well as a boat-access ramp just above the dam.

The Ida Lake zone is the only site where all four of the project’s main goals can possibly be achieved, although this is dependent on the results of the dam removal study. This location is ideal for pursuing 1) improvements to water quality within the Poestenkill, 2) reduced flooding impacts, 3) habitat and ecological restoration and 4) increasing public access opportunities to the Poestenkill.



View west towards Pawling Ave bridge from banks of Mt Ida Cemetery.



Timber dam that supports Ida Lake.



View across timber dam and Ida Lake towards Eagle Scout Park & boat launch from corner of Mt Ida Cemetery.



View of Ida Lake and algae bloom from woodland trail along Mt Ida Cemetery



Parking area and Ida Lake boat launch from cemetery.



Mt Ida cemetery is a quiet, peaceful open space with older trees and headstones.

6 WORKSHOP & STUDY RESULTS

The workshop resulted in a great deal of ideas generated about the future of the Poestenkill Creek and opportunities for improving the water body through green infrastructure investments. Through the active participation of stakeholders and creative explorations during the design charrette, we have a better understanding for the Creek’s opportunities and liabilities, as well as the community’s needs and perceptions. This section of the report includes a series of recommendations for the future development of each site based on the survey results, design charrette and feedback after reviewing the draft report. The authors would like to note that while implementing the recommendations contained in this report will likely result in improved ecological functioning, water quality and public access to the Poestenkill, it is important to consider ways in which these improvements could effect neighborhood affordability for existing residents, particularly historically disadvantaged communities. Efforts should be made to maintain affordability for these residents in order to avoid unintentional gentrification of existing neighborhoods and communities.

Survey Results

The survey listed eight categories of questions that were designed to assemble a portrait of the community’s perceptions and programatic needs as they relate to public access to open space, ecological restoration, and water quality issues. Each of the eight questions were ranked from a one (lowest score) to five (highest score) and then tallied for each site, which could receive a combined score of up to 40 points in all 8 categories. Sites receiveing the highest score were determined to have the greatest potential to provide public benefits as well as the greatest need for green infrastructure interventions.

The results of the survey are summarized in the table below. The Design Team received 14 completed surveys at the end of the workshop and pooled them all together into a summary worksheet. Based on the averaged rankings from the charrette participants, we can see that The Poestenkill Gorge site and the Ida Lake site are tied with the overall highest rankings at 28/40. The Canal Banks site adjacent to the playground received the third highest score with 27/40 and the Hudson Riverfront site was a close 4th with 26/40. The Industrial zone held the least potential for participants, with an overall score of 22/40. Looked at from another perspective, the Poestenkill Gorge site possessed the highest ranking in terms of percieved ecological and historical value. However, the Canal Banks site

Question	Site 1 - Hudson Riverfront	Site 2 - Industrial Zone	Site 3 - Canal Banks	Site 4 - Poestenkill Gorge	Site 5 - Ida Lake
1. Flooding	2	1	2	2	2
2. Water Quality	3	2	2	2	3
3. Presence of Crime	3	3	3	3	3
4. Public Use	4	3	4	4	3
5. Public Access	4	4	5	3	4
6. Public Proximity	4	4	5	4	4
7. Ecology & Natural Heritage	3	3	3	5	4
8. History & Culture	3	2	3	5	4
Total Score:	26	22	27	28	28

adjacent to the playground appears to play the most significant public role in terms of its perceived accessibility and proximity to residents. Based on the results of the survey exercise, we ranked the sites in terms of investment priorities in the following order:

- 1. Poestenkill Gorge
- 2. Ida Lake
- 3. Canal Banks & Playground
- 4. Hudson Riverfront
- 5. Industrial Zone

Each site has a different programatic and design focus, which is explored in detail in the next section. While the sites have been prioritized based on public perception alone, budget constraints and strategic municipal planning considerations will also impact the implementation schedule. We will leave it up to City Planning officials to determine exactly which project should be pursued, and in what order, but we believe the vision laid out in this document captures a significant portion of the community’s views for each site.

Design Charrette

The intensive design sessions took up most of the afternoon during the workshop. Team 1 explored sites 1-3 and Team 2 focused on sites 4-5. Overall, the participants felt strongly that each of the sites had latent potential that warranted investment and all could provide amenities that satisfied different community and ecological needs. Overall, the group felt that any opportunity to enhance the connectivity of these different sites along the Poestenkill through bicycle and pedestrian routes as well as open space preservation and restoration, was something to strive for in future projects. The following represents a summary of the results from each team during the design and exploration session:



Workshop attendees participate in a design charrette in TAP, Inc's offices. (Photo by Hans Hesselein)

Site 1 - Hudson Riverfront

In order to attract the future talent-pool needed to create and sustain the knowledge-based economy, the City should invest in enhancing public access opportunities to the waterfronts of both the Poestenkill and Hudson River on the Scolite site. The confluence of these two rivers represents one of the most engaging natural resources of this city, which could be harnessed to improve ecological functioning and quality of life for the City of Troy. While the Hudson Riverfront sites offer ample opportunities for public amenities that will bring residents in closer contact with the Hudson Riverfront, much of the site's future development will likely involve public/private partnerships that leverage private development to provide public benefits.

Participants expressed that this site should be developed in ways that provide economic development opportunities consistent with the knowledge-based economy plans for the Monroe District in Realize Troy. Additionally, participants stated that they would love to see amenities that would enhance public access to the Hudson and Poestenkill and extend existing and proposed transportation networks to include bicycle and pedestrian connectivity to the larger city and region. The list of proposed amenities incorporated into the design plans included:

- Provide public trail along waterfront and enhanced fishing access to both the Hudson and Poestenkill
- Place a pedestrian and bicycle bridge across the mouth of the Poestenkill in order to unify the a future Hudson River greenway trail
- Incorporate a shared bicycle and pedestrian path parallel to the proposed South Troy Industrial Access Rd
- Improve Madison Street with street trees, bioswales and a sidewalk connecting to the South Troy neighborhood
- Allow shared industrial docking with safe public access to the Hudson riverfront
- Provide a green public esplanade along the banks of the Poestenkill
- Install a pedestrian crossing over the Poestenkill from the Scolite site to the salt-storage site & connect both to the Hudson Waterfront Bike Trail and proposed Rail Station
- Incorporate multilingual environmental signage that explains the cultural and natural history of the Hudson and Poestenkill as well as warnings about fish consumption.
- Explore placing off-line Combined Sewer Overflow (CSO) storage beneath Scolilte site to reduce overflows from the Madison Street outfall (CSO 039)

Site 1: Hudson Riverfront - Recommended Grants (for more detailed grant information, refer to Appendix 1)

No.	Opportunity / Grant Name	Funder	Brief Grant Description	Funding Range	Match	Deadline	Project Alignment
4	Water Quality Improvement Project (WQIP)	NYSDEC	The WQIP program is a competitive, statewide reimbursement grant program open to local governments and not-for-profit corporations for implementation projects that directly address documented water quality impairments or protect a drinking water source.	up to \$1 mil	25% local match	July 27, 2018, recurring annually	These grants could be used to fund a green infrastructure study or to design and implement green infrastructure improvements along the Poestenkill
5	Wastewater Infrastructure Engineering Planning Grant	NYSDEC	This grant provides funds to municipalities to conduct initial engineering studies and planning for water infrastructure projects, including green infrastructure installations.	up to \$50,000	20% local match	July 27, 2018, recurring annually	
7	NY Green Innovation Grant Program	NY Environmental Facilities Corporation (NYEFC)	The Green Innovation Grant Program (GIGP) supports projects across New York State that utilize unique stormwater infrastructure design and create cutting-edge green technologies.	no cap	10% minimum match	July 27, 2018, recurring annually	
14	Hudson River Estuary Program - River Access Grants	New York State Environmental Protection Fund	The grant funds projects along the shoreline of the Hudson estuary that provide new or improved accessibility at access sites for boating, fishing, swimming, and/or wildlife-dependent recreation.	\$10,500 - \$50,000		August 22, 2018, recurring annually	This grant could be utilized for the DESIGN of the Hudson waterfront greenway along the Scolite and Valente sites as well as those connected to these sites north and south
17	Restoration of Watershed Connectivity, Hudson River Estuary Program	NEIWPCC	The grant seeks to fund projects that will help restore aquatic habitat connectivity for herring and eel, and reduce localized flood risks, and improve conditions on Hudson River Estuary tributaries.	\$100,000 - \$105,000	none	February 2, 2018	This grant could be utilized for funding the restoration of shoreline habitat along the Valente site or aquatic habitat within the Poestenkill
27	Hudson River Valley Greenway Community Grants	The Hudson River Valley Greenway Grant Program	Greenway Communities are eligible to receive funding to develop plans or projects consistent with the five Greenway criteria: natural and cultural resource protection, economic development, public access, regional planning, and heritage and environmental education.	up to \$10,000	50% match	October 12, 2018, recurring annually	This grant could be utilized for the DESIGN of the Hudson waterfront greenway along the Scolite and Valente sites as well as those connected to these sites north and south
31	Statewide Transportation Improvement Program (STIP)	NYSDOT	The STIP includes highway, transit and non-motorized projects as well as urban and rural projects.				This grant could be utilized for the CONSTRUCTION of the Hudson waterfront greenway along the Scolite and Valente sites as well as those connected to these sites north and south



SITE 1 - HUDSON RIVERFRONT





SITE 1 - PERSPECTIVE VIEW OF HUDSON RIVERFRONT

Site 2 - Industrial Zone

The disussions held during the workshop revealed that this area of the Poestenkill should also be developed to support the knowledge-based economy of the future Monroe District and host the commuter train station while creating an adjacent public amenity that could benefit the residents of the proposed 80-unit multifamily residential facility on the block hemmed in by 1st, 2nd, Ida and Jefferson Streets. Residents of the proposed Riverside District, which terminates at the Salt-Storage Site will also desire public green spaces in this zone. Participants felt that agreements with the railroad company could lead to property transfers and acquisitions that could benefit both parties and facilitate relatively simple park investments to make this a critical greenway link along the Poestenkill Creek. Proposed amenities for this area include:

- Create new open space to benefit current and future South Troy, Riverside District and Monroe District residents on both sides of the Poestenkill - explore public/private partnership with developers
- Enhance pedestrian experience along 1st Street
- Create switchback trail and public access to Poestenkill on north side of Creek at the trailer-parking site
- Provide access to Poestenkill for fishing, recreation and educational activities
- Install environmental education signage in multiple languages, including warnings about fish consumption in lower reaches of Poestenkill
- Enhance the 1st Street Bridge in order to facilitate sport fishing, especially the triangular rail easement corners on both sides of 1st St Bridge

Site 2: Industrial Zone - Recommended Grants (for more detailed grant information, refer to Appendix 1)

No.	Opportunity / Grant Name	Funder	Brief Grant Description	Funding Range	Match	Deadline	Project Alignment
11	Five Star and Urban Waters Restoration grants	National Fish & Wildlife Foundation (NFWF)	Projects may include one or more of the following: wetland, riparian, forest and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, water quality monitoring and stormwater management.	\$20,000 - 50,000	50% non-federal match	Mid-November, recurring annually	This grant could be utilized for funding riparian forest and aquatic habitat restoration along the Poestenkill
12	NFWF Bring Back The Natives	National Fish & Wildlife Foundation (NFWF)	The program invests in conservation activities that restore, protect and enhance native populations of sensitive or listed fish species across the United States, especially in areas on or adjacent to federal agency lands. Projects benefitting one or more of the following native fish species and focal geographies are priorities for funding through the Bring Back the Natives program: Native fish of eastern U.S. rivers, especially river herring and American shad in the Chesapeake and Delaware watersheds, and resilient populations of eastern brook trout throughout their range.	\$50,000 - 100,000	50% non-federal match	End of June, recurring annually	This grant could be utilized for funding riparian forest and aquatic habitat restoration along the Poestenkill
15	Hudson River Estuary Program - River Education Grants	New York State Environmental Protection Fund	The grant funds development of plans or curriculum, purchase of equipment, development of web sites or mobile phone apps, and/or construction of physical improvements to enhance education about the estuary along the tidal waters of the Hudson.	\$10,500 - \$40,000		August 22, 2018, recurring annually	This grant could be utilized for funding access to the banks of the Poestenkill and the construction of a water-monitoring & sampling station for local educators and environmental organizations
17	Restoration of Watershed Connectivity, Hudson River Estuary Program	NEIWPCC	The grant seeks to fund projects that will help restore aquatic habitat connectivity for herring and eel, and reduce localized flood risks, and improve conditions on Hudson River Estuary tributaries.	\$100,000 - \$105,000	none	February 2, 2	This grant could be utilized for funding aquatic habitat restoration along the Poestenkill
26	The Community and Transportation Linkage Planning Program	Capital District Transportation Committee	Funds are intended be used towards planning studies of transportation linkage studies related to: multi-modal transportation networks, support urban revitalization, develop transit corridors, develop bicycle and pedestrian friendly areas. Eligible projects must already be adopted by a local authority or be related to an existing approved plan.	up to \$100,000	25% local match	December 15, 2017, recurring annually	These grants could be utilized for funding the conversion of Canal Ave from a traditional road to a multi-modal Woonerf that accommodates pedestrians, bicyclists and automobiles., as well as the extended bicycle network connecting to the Hudson river greenway
30	BUILD Transportation Discretionary Grants	USDOT	Previously known as TIGER grants or ARRA funds, this program is intended to provide funding to facilitate freight movement, improve access to reliable and affordable transportation options and enhance health access and safety for residents.	up to \$25 mil		July 18, 2018, recurring annually	
31	Statewide Transportation Improvement Program (STIP)	NYSDOT	The STIP includes highway, transit and non-motorized projects as well as urban and rural projects.				



SITE 2 - PERSPECTIVE VIEW OF INDUSTRIAL ZONE

Site 3 - Canal Banks

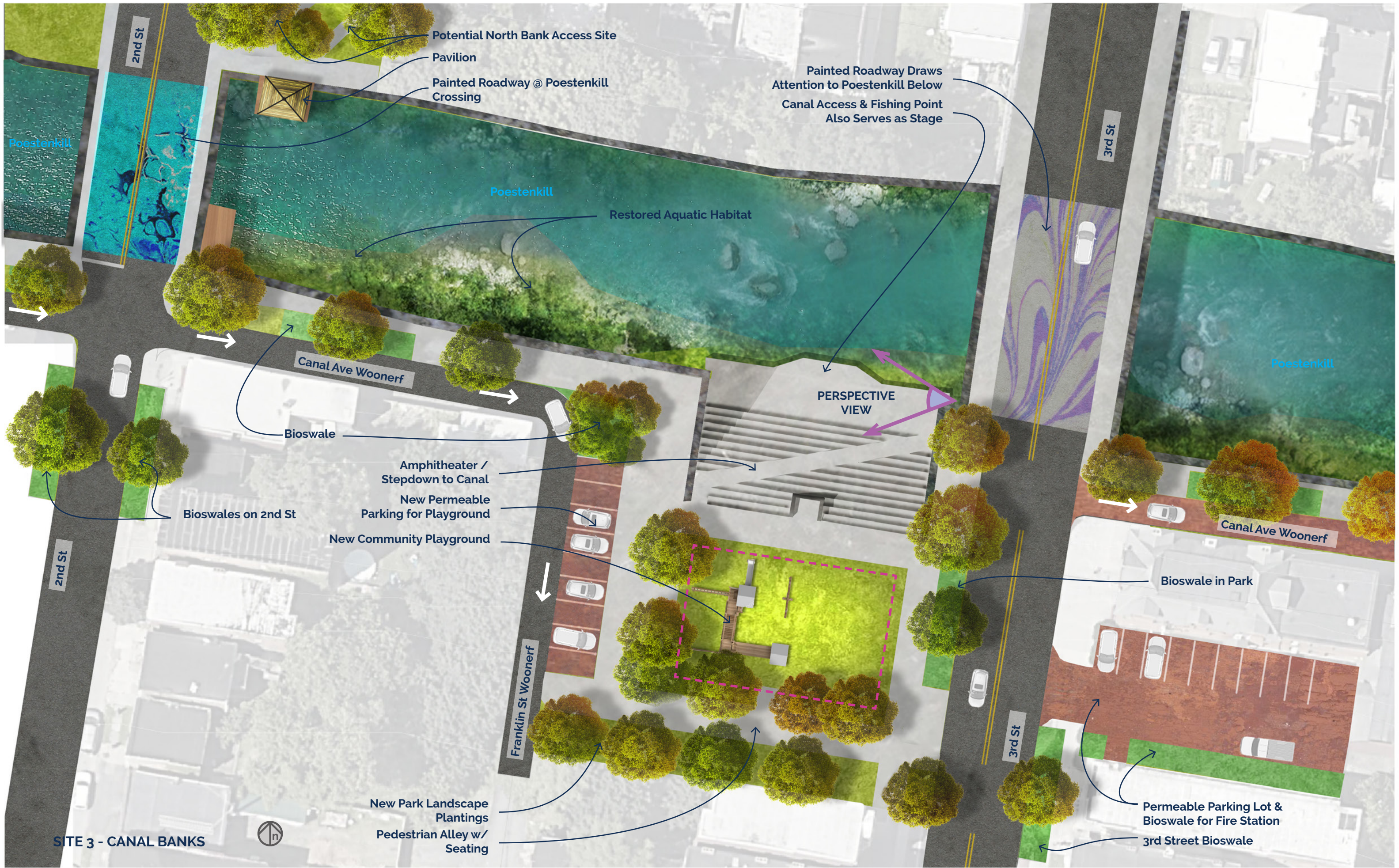
Located deep in the heart of the South Troy residential neighborhood, this site was polled as being the most significant in terms of public access, proximity and use. The participants explored altering Canal Street to emphasize pedestrian and cyclist use over automobiles and integrating the Poestenkill waterfront into the public playground on 3rd & Canal Streets, creating a significant community park. Participants felt that this site has the greatest potential to allow for a tiered park to interact more directly with the creek and allow public access to the water’s edge for fishing, sight-seeing, entertainment and recreation. The stakeholders proposed the following amenities and considerations for the Canal Banks site:

- Short term: selective tree thinning and guardrail installation in order to allow fishing access along the Canal Street bulkhead
- Convert Canal Street into a woonerf (living street)¹ that emphasizes pedestrians and cyclists and close some sections of Canal Street entirely to automobiles
- Integrate Poestenkill banks with playground site and create a stepped amphitheater or public seating area down to the Canal
- Improve intersections along Canal Street, especially at bridge crossings with street trees and bioswales to help pre-treat stormwater runoff
- Provide bicycle route and pedestrian trail to connect Poestenkill Gorge Park with Hudson Riverfront
- Install environmental education signage in multiple languages, including warnings about fish consumption in lower reaches of Poestenkill
- Create gravel bars and fish spawning habitat in Poestenkill, especially for eels and trout

¹ Woonerf: A “Woonerf” is a street that is designed primarily to accommodate non-vehicular traffic such as pedestrians and cyclists. Woonerfs also accommodate vehicles, but pedestrian and cyclists take precedence in the design process. Typically Woonerfs have curves to slow traffic, no curbs, intermittent parking, and trees and recreation areas for pedestrian use.; <https://www.livingstreetsalliance.org/resources/useful-terms/>

Site 3: Canal Banks - Recommended Grants (for more detailed grant information, refer to Appendix 1)

No.	Opportunity / Grant Name	Funder	Brief Grant Description	Funding Range	Match	Deadline	Project Alignment
4	Water Quality Improvement Project (WQIP)	NYSDEC	The WQIP program is a competitive, statewide reimbursement grant program open to local governments and not-for-profit corporations for implementation projects that directly address documented water quality impairments or protect a drinking water source.	up to \$1 mil	25% local match	July 27, 2018, recurring annually	These grants could be used to fund a green infrastructure study or to design and implement green infrastructure improvements along the Poestenkill
5	Wastewater Infrastructure Engineering Planning Grant	NYSDEC	This grant provides funds to municipalities to conduct initial engineering studies and planning for water infrastructure projects, including green infrastructure installations.	up to \$50,000	20% local match	July 27, 2018, recurring annually	
7	NY Green Innovation Grant Program	NY Environmental Facilities Corporation (NYEFC)	The Green Innovation Grant Program (GIGP) supports projects across New York State that utilize unique stormwater infrastructure design and create cutting-edge green technologies.	no cap	10% minimum match	July 27, 2018, recurring annually	
17	Restoration of Watershed Connectivity, Hudson River Estuary Program	NEIWPCC	The grant seeks to fund projects that will help restore aquatic habitat connectivity for herring and eel, and reduce localized flood risks, and improve conditions on Hudson River Estuary tributaries.	\$100,000 - \$105,000	none	Recurring Annually, February 2	This grant could be utilized for funding aquatic habitat restoration along the Poestenkill
18	Parks Grant Program	New York State Environmental Protection Fund	The Parks program is for the acquisition, development and planning of parks and recreational facilities to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes and for structural assessments and/or planning for such projects.				This grant could be utilized to fund improvements to the park, playground and waterfront amphitheater.
22	NY Environmental Justice Grants	NYSDEC Office of Environmental Justice	The grant will fund community-based organizations for projects that address exposure of communities to multiple environmental harms and risks ("projects"). Projects that focus on the following are encouraged: green infrastructure, tree planting, habitat enhancement, park development, subsistence fishing education, and others.	\$2,500 - \$100,000	none	July 27, 2018, recurring annually	This grant could be utilized to fund improvements to the park, playground and waterfront greening along the Poestenkill. This section of South Troy is within the NYSDEC-defined EJ zone.
26	The Community and Transportation Linkage Planning Program	Capital District Transportation Committee	Funds are intended be used towards planning studies of transportation linkage studies related to: multi-modal transportation networks, support urban revitalization, develop transit corridors, develop bicycle and pedestrian friendly areas.	up to \$100,000	25% local match	December 15, 2017, recurring annually	These grants could be utilized for funding the conversion of Canal Ave from a traditional road to a multi-modal Woonerf that accommodates pedestrians, bicyclists and automobiles.
30	BUILD Transportation Discretionary Grants	USDOT	Previously known as TIGER grants or ARRA funds, this program is intended to provide funding to facilitate freight movement, improve access to reliable and affordable transportation options and enhance health access and safety for residents.	up to \$25 mil		July 18, 2018, recurring annually	
31	Statewide Transportation Improvement Program (STIP)	NYSDOT	The STIP includes highway, transit and non-motorized projects as well as urban and rural projects.				



SITE 3 - CANAL BANKS



SITE 3 - PERSPECTIVE VIEW OF CANAL BANKS

Site 4 - Poestenkill Gorge

The sites that comprise the Poestenkill Gorge area have the greatest potential to become a regional destination park, but will also require the greatest investment in order to make it accessible to the general public because of the incredibly steep grade changes in this zone. Fortunately, most of the land bordering the Poestenkill is either already publicly owned or has good potential for negotiating a public access easement or land swap with the private owner. The stakeholder participants on Team 2 laid out a bold program and design framework for this area, including the following amenities:

- Build an accessible trail for hikers on both sides of the Poestenkill below Mount Ida Falls so that visitors can enjoy the swimming hole and majestic views up to the Falls
- Provide an accessible crossing from one side of the gorge to the other below the Falls so that visitors can travel between both significant public parks. Connect access points in each park to future extensions of the Narrows Trail for a comprehensive recreational and alternative transportation route across the City of Troy, providing a direct pedestrian and bicycle connection between the neighborhoods of South Troy and East Side
- Preserve some of the more significant industrial ruins and artifacts from Troy’s manufacturing legacy and provide interpretive signage and adaptive reuse where applicable
- Enhance the preserved industrial ruins with new public art installations that compliment and interpret the City’s industrial heritage
- Enhance swimming pools and make safe and universally accessible for public use during hotter months
- Enhance the Prospect Park underutilized area with new community amenities including public restrooms, permeable parking areas, a dog park, green infrastructure for stormwater management, community garden plots, ornamental landscaping and a structure for community use as well as vendor booth facilities
- Place a covered viewing pavilion at the rim of the gorge in the Propsect Park underutilized area that has a direct view across the Poestenkill to a similar pavilion in Poestenkill Gorge Park
- Enhance Poestenkill Gorge Park with native meadow restoration plantings to replace lawn areas in order to provide enhanced wildlife habitat and reduce maintenance requirements

Site 4: Poestenkill Gorge - Recommended Grants (for more detailed grant information, refer to Appendix 1)

No.	Opportunity / Grant Name	Funder	Brief Grant Description	Funding Range	Match	Deadline	Project Alignment
11	Five Star and Urban Waters Restoration grants	National Fish & Wildlife Foundation (NFWF)	Projects may include one or more of the following: wetland, riparian, forest and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, water quality monitoring and stormwater management.	\$20,000-50,000	50% non-federal match	Mid-November, recurring annually	This grant could be used for funding riparian forest restoration work, the establishment of a native meadow in Poestenkill Gorge Park, as well as green infrastructure installations to manage stormwater at both park sites.
15	Hudson River Estuary Program - River Education Grants	New York State Environmental Protection Fund	The grant funds development of plans or curriculum, purchase of equipment, development of web sites or mobile phone apps, and/or construction of physical improvements to enhance education about the estuary along the tidal waters of the Hudson.	\$10,500-\$40,000		August 22, 2018, recurring annually	This grant could be utilized for funding access to the Poestenkill Gorge and the construction of a water-monitoring & sampling station for local educators and environmental organizations
18	Parks Grant Program	New York State Environmental Protection Fund	The Parks program is for the acquisition, development and planning of parks and recreational facilities to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes and for structural assessments and/or planning for such projects.				This grant could be utilized to pay for improvements to the underutilized area of Prospect Park, including the dog park, parking, trails, community gardens, restrooms and other improvements.
24	NY Environmental Restoration Program	NYSDEC	Reimburses remediation design and construction costs of municipally owned Brownfield Sites.	\$20,000-\$3,000,000		September 7, 2018, recurring annually	This grant could be utilized to assist with cleaning up and preserving areas of Prospect Park that contain former industrial ruins.
19	Recreation Trails Grant Program	New York State Environmental Protection Fund	The grant provides funds to develop and maintain recreational trails for both motorized and non-motorized recreational trail use. Funding is available for the maintenance and restoration of existing recreational trails, development and rehabilitation of trailside and trailhead facilities and trail linkages for recreational trails, purchase and lease of recreational trail construction and maintenance equipment, construction of new recreational trails, acquisition of easements and property for recreational trails or recreational trail corridors, and assessment of trail conditions for accessibility and maintenance.	\$5,000-\$20,000	20% local match		These grants could be utilized to pay for the accessible trail crossing for hikers, bicyclists and users with multiple abilities to cross from Poestenkill Gorge Park to Prospect Park, as well as to connect this new trail to the proposed Narrows Trail in both parks.
27	Hudson River Valley Greenway Community Grants	The Hudson River Valley Greenway Grant Program	Greenway Communities are eligible to receive funding to develop plans or projects consistent with the five Greenway criteria: natural and cultural resource protection, economic development, public access, regional planning, and heritage and environmental education.	up to \$10,000	50% match	October 12, 2018, recurring annually	
28	Hudson River Valley Greenway Trail Grants	The Hudson River Valley Greenway Grant Program	This annual grant program is dedicated to funding recreational trail projects, including: trail construction, planning and design, trail rehabilitation and improvement, trail education or interpretation.	up to \$75,000	50% match	August 10, 2018, recurring annually	





SITE 4 - PERSPECTIVE VIEW OF POESTENKILL GORGE

Site 5 - Ida Lake

The areas around Ida Lake comprise the most upland sites under consideration and present opportunities for water quality improvements, wildlife habitat restoration and new or improved boating access locations. Ida Lake has historically been used as a public iceskating rink in winter months, a tradition that participants felt should be restored along with any enhancements of the lake edge. Both the Cemetery site and Eagle Park could use better signage and enhanced visibility, which would be an easy way of improving public use of these areas. It was also suggested that a study be conducted to partially or fully remove the timber dam and dredge the Ida Lake wetland to convert this section of the Poestenkill to a forrested emergent wetland. This would allow sediment to flow downstream for fish habitat in the Canal and Industrial Zones and could create more flood storage in the upland areas. Ultimately, this has the greatest potential to improve downstream water quality on the Poestenkill. Stakeholders explored the following improvements during the design charrette:

- Formalize the existing trail along the woodland edge of Poestenkill Creek and Ida Lake and connect to the Pawling Avenue sidewalk
- Rebuild the winter skating house that the City of Troy used to keep warm for iceskating on Ida Lake, allow vendors to sell food and beverages during seasonal events
- Create a green snow-catchment strip for winter plowing along Pawling Ave; this could also double as bioswales and street tree plantings
- Formalize the cemetery entrance with landscaping & signage to improve public perceptions about the site and encourage more frequent use
- Create formal parking area for cemetery visitors and park users at the back of the cemetery near the shore of Ida Lake
- Create a formal boat launch and ramp into Ida Lake from both the cemetery and Eagle Park sites
- Create an educational and bird-watching boardwalk with interpretive signage through the wetland
- Provide more fishing access to Ida Lake
- Create a planting plan for the cemetery tree plantings
- Study dam removal to create emergent wetland, enhance flood storage and improve water quality downstream

Site 5: Ida Lake - Recommended Grants (for more detailed grant information, refer to Appendix 1)

No.	Opportunity / Grant Name	Funder	Brief Grant Description	Funding Range	Match	Deadline	Project Alignment
2	North American Wetlands Conservation Act - Standard Grants Program	US Fish & Wildlife	Projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetlands-associated migratory birds.	\$75,000-1 mil	50% non-federal funding	End of February & July, recurring biannually	These grants could be utilized for wetland restoration and habitat enhancement in the wetlands and riparian forests surrounding Ida Lake
3	North American Wetlands Conservation Act - Small Grants Program	US Fish & Wildlife	Projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetlands-associated migratory birds.	up to \$100,000	50% non-federal funding	Mid October, recurring annually	
4	Water Quality Improvement Project (WQIP)	NYSDEC	The WQIP program is a competitive, statewide reimbursement grant program open to local governments and not-for-profit corporations for implementation projects that directly address documented water quality impairments or protect a drinking water source.	up to \$1,000,000	25% local match	July 27, 2018, recurring annually	These grants could be utilized for funding green infrastructure improvements along Pawling Avenue
7	NY Green Innovation Grant Program	NY Environmental Facilities Corporation (NYEFC)	The Green Innovation Grant Program (GIGP) supports projects across New York State that utilize unique stormwater infrastructure design and create cutting-edge green technologies.	no cap	10% minimum match	July 27, 2018, recurring annually	
5	Wastewater Infrastructure Engineering Planning Grant	NYSDEC	This grant provides funds to municipalities to conduct initial engineering studies and planning for water infrastructure projects, including green infrastructure installations.	up to \$50,000	20% local match	July 27, 2018, recurring annually	These grants could be utilized to study the Ida Lake wooden crib dam removal project and the ways that might benefit flooding resilience as well as aquatic and riparian habitat
8	NY Engineering Planning Grant Program	NY Environmental Facilities Corporation (NYEFC)	Funding may be used by municipalities for the preparation of an engineering report. This includes planning activities to determine the scope of water quality issues, evaluation of alternatives, and the recommendation of a capital improvement project. Projects should be focused on implementing green infrastructure improvements.	up to \$100,000	none	July 27, 2018, recurring annually	
15	Hudson River Estuary Program - River Education Grants	New York State Environmental Protection Fund	The grant funds development of plans or curriculum, purchase of equipment, development of web sites or mobile phone apps, and/or construction of physical improvements to enhance education about the estuary along the tidal waters of the Hudson.	\$10,500-\$40,000		August 22, 2018, recurring annually	This grant could be utilized for funding access to Ida Lake and the construction of a water-monitoring & sampling station for local educators and environmental organizations as well as a wetland boardwalk for birders, residents and students
23	NY Urban & Community Forestry Program	NYSDEC	Grant projects must implement successful tree inventory, community forest management planning, tree planting, tree maintenance, or education programming projects in New York State to create healthy urban and community forests while enhancing the quality of life for urban residents.	\$11,000-50,000	25% local match	July 12, 2018, recurring annually	This grant could be utilized for planning and implementing a tree canopy restoration plan as well as new entry gardens for Mt Ida Cemetery



SITE 5 - IDA LAKE



SITE 5 - PERSPECTIVE VIEW OF IDA LAKE

7 CONCLUSIONS AND RECOMMENDATIONS

The Troy and Poestenkill Green Infrastructure Visioning Workshop was a valuable exercise for the ways in which it illuminated the potential of the Poestenkill Creek to provide recreation opportunities, enhance habitat and improve local water quality. The participating stakeholders offered their local and professional expertise and insights to understand the challenges facing their community and the most appropriate amenities that should be explored in future capital projects. An overview of the recommendations to come from the workshop include: On the western end of the Poestenkill, the Hudson Riverfront and Industrial Zone sites should primarily focus on economic development, expanding pedestrian and bicycle transportation networks and enhanced access to the banks of the Poestenkill for recreational purposes. For the middle-zone of the study area, the Canal Banks area near the community playground, stakeholders felt that development should focus on creating a community park that engaged with the Poestenkill directly through terraced pedestrian areas and the creation of a woonerf system with street-side bioswales that prioritized pedestrian and bicycle circulation over automobiles. The two eastern upland sites presented the best opportunities for ecological restoration and the enhancement of natural areas as well as passive recreation like hiking and boating. The Poestenkill Gorge site should be focused on providing accessible trails that sitch both sides of the creek together (Poestenkill Gorge Park with Prospect Park) with a Mt Ida Falls viewing station at their base. Development at the Ida Lake site should include more boating access points, enhanced natural areas and possibly dam removal work in order to provide the greatest benefits to water quality in the Creek.

With this report, The City of Troy now has access to a compilation of stakeholder opinion and design concepts that will assist with the selection of which future Poestenkill-related projects to implement and when to pursue them. Obtaining and allocating funds to implement further design studies and cost-estimating for individual projects is the logical next step. This report identifies prominent funding sources that the City or other stakeholder groups could pursue in order to undertake the projects identified for each site under the Workshop Results section. This report can be referred to in grant applications to demonstrate to funders that an initial study of local need and opportunities has been conducted and that the proposed project is based on an established process that engaged local stakeholders and environmental experts.

Project & Funding Alignment

Each of the project sites explored in this report have different attributes and opportunities to be improved with capital investment that will fall under several general funding categories. These categories are listed beside the grants to which they best relate in the attached Appendix:

- Public Waterfront Access & Recreation
- Habitat Restoration
- Green Infrastructure & Water Quality Improvements
- Transportation Improvements
- Public Engagement & Education (Signage)
- Climate Adaptation
- Environmental Justice
- Tree Planting
- Public Park Improvements
- Transportation Planning
- Trail Development
- Brownfield Cleanup

APPENDIX 1GRANT LIST

This is a non-exhaustive grant list that identifies potential funding sources and aligns them with project categories that relate to each of the five sites.

No.	Opportunity / Grant Name	Funder	Brief Description
1	USEPA Environmental Education Grants	USEPA	Support locally-focused environmental education projects that increase public awareness and knowledge about environmental and conservation issues and provide the skills that participants in its funded projects need to make informed decisions and take responsible actions toward the environment.
2	North American Wetlands Conservation Act - Standard Grants Program	US Fish & Wildlife	Projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetlands-associated migratory birds.
3	North American Wetlands Conservation Act - Small Grants Program	US Fish & Wildlife	Projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetlands-associated migratory birds.
4	Water Quality Improvement Project (WQIP)	NYSDEC	The WQIP program is a competitive, statewide reimbursement grant program open to local governments and not-for-profit corporations for implementation projects that directly address documented water quality impairments or protect a drinking water source.
5	Wastewater Infrastructure Engineering Planning Grant	NYSDEC	This grant provides funds to municipalities to conduct initial engineering studies and planning for water infrastructure projects, including green infrastructure installations.
6	Intermunicipal Water Infrastructure Grants Program	NY Environmental Facilities Corporation (NYEFC)	Grant funds are intended to be used for projects that involve 2 or more municipalities towards wastewater treatment plant construction, retrofits to outdated stormwater management facilities, installation of municipal sanitary sewer infrastructure.
7	NY Green Innovation Grant Program	NY Environmental Facilities Corporation (NYEFC)	The Green Innovation Grant Program (GIGP) supports projects across New York State that utilize unique stormwater infrastructure design and create cutting-edge green technologies.
8	NY Engineering Planning Grant Program	NY Environmental Facilities Corporation (NYEFC)	Funding may be used by municipalities for the preparation of an engineering report. This includes planning activities to determine the scope of water quality issues, evaluation of alternatives, and the recommendation of a capital improvement project. Projects should be focused on implementing green infrastructure improvements.
9	Water Infrastructure Improvement Grants	NY Environmental Facilities Corporation (NYEFC)	Grants for capital projects to upgrade or repair wastewater treatments plants and to abate combined sewer overflows, including projects to install heightened nutrient treatment systems.
10	Integrated Solutions Construction Grant Program	NY Environmental Facilities Corporation (NYEFC)	Funds are used to construct projects that remove stormwater from combined, sanitary, or storm sewers. The proposed project should demonstrate the value of integrating green practices into traditional gray infrastructure projects to provide water quality benefits, as well as the advantages of natural systems.
11	Five Star and Urban Waters Restoration grants	National Fish & Wildlife Foundation (NFWF)	Projects may include one or more of the following: wetland, riparian, forest and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, water quality monitoring and stormwater management.
12	NFWF Bring Back The Natives	National Fish & Wildlife Foundation (NFWF)	The program invests in conservation activities that restore, protect and enhance native populations of sensitive or listed fish species across the United States, especially in areas on or adjacent to federal agency lands. Projects benefitting one or more of the following native fish species and focal geographies are priorities for funding through the Bring Back the Natives program: Native fish of eastern U.S. rivers, especially river herring and American shad in the Chesapeake and Delaware watersheds, and resilient populations of eastern brook trout throughout their range.

Website	Funding Range	Match Requirement	Deadline	Funding Category
https://www.epa.gov/education/environmental-education-ee-grants	\$50,000-100,000	25% non-federal funding	Mid April, recurring annually	Public Engagement & Education (Signage)
https://www.fws.gov/birds/grants/north-american-wetland-conservation-act/how-to-apply-for-a-nawca-grant.php#us-standard	\$75,000-1 mil	50% non-federal funding	End of February & July, recurring biannually	Habitat Restoration
https://www.fws.gov/birds/grants/north-american-wetland-conservation-act/how-to-apply-for-a-nawca-grant.php#us-small	up to \$100,000	50% non-federal funding	Mid October, recurring annually	Habitat Restoration
http://www.dec.ny.gov/pubs/4774.html	up to \$1,000,000	25% local match	July 27, 2018, recurring annually	Green Infrastructure & Water Quality Improvements; Habitat Restoration
http://www.dec.ny.gov/pubs/81196.html	up to \$50,000	20% local match	July 27, 2018, recurring annually	Green Infrastructure & Water Quality Improvements;
https://www.efc.ny.gov/IMG	up to \$10,000,000	60% local match		Green Infrastructure & Water Quality Improvements;
https://www.efc.ny.gov/GIGP	no cap	10% minimum match	July 27, 2018, recurring annually	Green Infrastructure & Water Quality Improvements
https://www.efc.ny.gov/EPG	up to \$100,000	none	July 27, 2018, recurring annually	Green Infrastructure & Water Quality Improvements
https://www.efc.ny.gov/WIIAApply	up to \$10,000,000	60% local match		Green Infrastructure & Water Quality Improvements;
https://www.efc.ny.gov/ISC		50% match		Green Infrastructure & Water Quality Improvements;
http://www.nfwf.org/fivestar/Pages/home.aspx	\$20,000-50,000	50% non-federal match	Mid-November, recurring annually	Green Infrastructure & Water Quality Improvements; Habitat Restoration
http://www.nfwf.org/bbn/Pages/home.aspx	\$50,000-100,000	50% non-federal match	End of June, recurring annually	Habitat Restoration

No.	Opportunity / Grant Name	Funder	Brief Description
13	National Coastal Resilience Fund	National Fish & Wildlife Foundation (NFWF)	Projects funded under this national program will provide benefits to communities, as well as for fish and wildlife. Funds should restore and strengthen natural systems so they can protect coastal communities from the impacts of storms and floods and enable them to recover more quickly, while also enhancing habitats for important fish and wildlife populations. Funds can be used for either 1) Planning & Design or 2) Implementation
14	Hudson River Estuary Program - River Access Grants	New York State Environmental Protection Fund	The grant funds projects along the shoreline of the Hudson estuary that provide new or improved accessibility at access sites for boating, fishing, swimming, and/or wildlife-dependent recreation.
15	Hudson River Estuary Program - River Education Grants	New York State Environmental Protection Fund	The grant funds development of plans or curriculum, purchase of equipment, development of web sites or mobile phone apps, and/or construction of physical improvements to enhance education about the estuary along the tidal waters of the Hudson.
16	Hudson River Estuary Program - Local Stewardship PLanning	New York State Environmental Protection Fund	Grant projects must provide benefits of a vital estuary ecosystem: clean water; resilient communities; the sustainability of Estuary fish, wildlife, and habitats; conservation of natural scenery; and enhanced access, river education, and recreational opportunities. Projects can include resilience planning, habitat restoration planning, green infrastructure planning and others.
17	Restoration of Watershed Connectivity, Hudson River Estuary Program	NEIWPCC	The grant seeks to fund projects that will help restore aquatic habitat connectivity for herring and eel, and reduce localized flood risks, and improve conditions on Hudson River Estuary tributaries.
18	Parks Grant Program	New York State Environmental Protection Fund	The Parks program is for the acquisition, development and planning of parks and recreational facilities to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes and for structural assessments and/or planning for such projects.
19	Recreation Trails Grant Program	New York State Environmental Protection Fund	The grant provides funds to develop and maintain recreational trails for both motorized and non-motorized recreational trail use. Funding is available for the maintenance and restoration of existing recreational trails, development and rehabilitation of trailside and trailhead facilities and trail linkages for recreational trails, purchase and lease of recreational trail construction and maintenance equipment, construction of new recreational trails, acquisition of easements and property for recreational trails or recreational trail corridors, and assessment of trail conditions for accessibility and maintenance.
20	Trees for Tributaries Program	New York State Environmental Protection Fund	Grant projects must implement tree and shrub planting activities to replant New York's Riparian Areas through the Hudson River Trees for Tribs program. Grant projects must show significant improvement to water quality, wildlife habitat and/or climate resiliency.
21	Local Waterfront Revitalization Program Grants	New York State Environmental Protection Fund	This grant provides funds for local governments to produce A Local Waterfront Revitalization Program (LWRP), which consists of a planning document prepared by a community, and the program established to implement the plan. An LWRP may be comprehensive and address all issues that affect a community's entire waterfront, or it may address the most critical issues facing a significant portion of its waterfront. Funds can be used for planning a LWRP or implementation of projects identified in a LWRP.
22	NY Environmental Justice Grants	NYSDEC Office of Environmental Justice	The grant will fund community-based organizations for projects that address exposure of communities to multiple environmental harms and risks ("projects"). Demonstration projects that have the ability to educate and inform community members about environmental health are encouraged, including: green infrastructure, tree planting, habitat enhancement, park development, subsistence fishing education, and others.
23	NY Urban & Community Forestry Program	NYSDEC	Grant projects must implement successful tree inventory, community forest management planning, tree planting, tree maintenance, or education programming projects in New York State to create healthy urban and community forests while enhancing the quality of life for urban residents.

Website	Funding Range	Match Requirement	Deadline	Funding Category
http://www.nfwf.org/coastalresilience/Pages/2018rfp.aspx	\$150,000-\$200,000 for Design; \$500,000 to \$3,000,000 for implementation	50% non-federal match	August 7, 2018, recurring annually	Climate Adaptation; Green Infrastructure & Water Quality Improvements; Habitat Restoration;
http://www.dec.ny.gov/lands/5091.html	\$10,500-\$50,000		August 22, 2018, recurring annually	Public Waterfront Access & Recreation
http://www.dec.ny.gov/lands/5091.html	\$10,500-\$40,000		August 22, 2018, recurring annually	Public Engagement & Education (Signage)
	\$10,500-\$50,000	15% local match	July 11, 2018, recurring annually	Environmental Justice, Green Infrastructure & Water Quality Improvements; Habitat Restoration; Public Engagement & Education (Signage); Tree Planting; Climate Adaptation
http://neiwpcc.org/wp-content/uploads/2018/02/2018-Watershed-Reconnection.pdf	\$100,000-\$105,000	none	February 2, 2018	Green Infrastructure & Water Quality Improvements; Habitat Restoration
https://parks.ny.gov/grants/parks/default.aspx				Green Infrastructure & Water Quality Improvements; Habitat Restoration; Public Park Improvements; Tree Planting
https://parks.ny.gov/grants/recreational-trails/default.aspx	\$5,000-\$20,000	20% local match		Transportation Planning; Trail Development
https://www.dec.ny.gov/lands/43668.html	\$11,000-\$100,000	none	September 7, 2018, recurring annually	Tree Planting; Green Infrastructure & Water Quality Improvements; Habitat Restoration
https://www.dos.ny.gov/opd/grantOpportunities/epf_lwrrpGrants.html		15% for EJ communities; 25% for other communities	Typically end of July, recurring annually	Environmental Justice, Green Infrastructure & Water Quality Improvements; Habitat Restoration; Public Waterfront Access & Recreation, Transportation Planning, Climate Adaptation
https://grantsgateway.ny.gov/IntelliGrants_NYSGG/module/nysgg/goportal.aspx?NavItem1=2	\$2,500-\$100,000	none	July 27, 2018, recurring annually	Environmental Justice, Green Infrastructure & Water Quality Improvements; Habitat Restoration; Public Engagement & Education (Signage), Tree Planting
https://www.dec.ny.gov/lands/5285.html	\$11,000-50,000	25% local match	July 12, 2018, recurring annually	Tree Planting; Green Infrastructure & Water Quality Improvements

No.	Opportunity / Grant Name	Funder	Brief Description
24	NY Environmental Restoration Program	NYSDEC	Reimburses remediation design and construction costs of municipally owned Brownfield Sites.
25	Boating Infrastructure Grant Program	NY Parks, Recreation & Historic Preservation	This grant is for the development and maintenance of facilities for transient nontrailerable recreational vessels. It is intended to support the repair or construction of boat access facilities for vessels 26' and greater in water 6' deep or greater. Probably only suitable for the Hudson River sites.
26	The Community and Transportation Linkage Planning Program	Capital District Transportation Committee	Funds are intended be used towards planning studies of transportation linkage studies related to: multi-modal transportation networks, support urban revitalization, develop transit corridors, develop bicycle and pedestrian friendly areas. Eligible projects must already be adopted by a local authority or be related to an existing approved plan.
27	Hudson River Valley Greenway Community Grants	The Hudson River Valley Greenway Grant Program	Greenway Communities are eligible to receive funding to develop plans or projects consistent with the five Greenway criteria: natural and cultural resource protection, economic development, public access, regional planning, and heritage and environmental education.
28	Hudson River Valley Greenway Trail Grants	The Hudson River Valley Greenway Grant Program	This annual grant program is dedicated to funding recreational trail projects, including: trail construction, planning and design, trail rehabilitation and improvement, trail education or interpretation.
29	Climate Smart Communities Grant	NYSDEC	Funds can be used towards an implementation or a planning project. Implementation projects, include climate change adaptation through flood risk reduction and natural resilience-based solutions.
30	BUILD Transportation Discretionary Grants	USDOT	Previously known as TIGER grants or ARRA funds, this program is intended to provide funding to facilitate freight movement, improve access to reliable and affordable transportation options and enhance health access and safety for residents.
31	Statewide Transportation Improvement Program (STIP)	NYSDOT	The STIP includes highway, transit and non-motorized projects as well as urban and rural projects.

Website	Funding Range	Match Requirement	Deadline	Funding Category
https://grantsgateway.ny.gov/IntelliGrants_NYSGG/module/nysgg/goportal.aspx?NavItem1=2	\$20,000-\$3,000,000		September 7, 2018, recurring annually	Brownfield Cleanup
https://parks.ny.gov/grants/boating-infrastructure/default.aspx		25% local match	August 10, 2018	Waterfront Access
http://www.cdtcmpo.org/page/10-project-programs/39-linkage-program	up to \$100,000	25% local match	December 15, 2017, recurring annually	Transportation Planning
https://hudsongreenway.ny.gov/grants-funding	up to \$10,000	50% match	October 12, 2018, recurring annually	Transportation Planning; Trail Development
https://hudsongreenway.ny.gov/grants-funding	up to \$75,000	50% match	August 10, 2018, recurring annually	Trail Development; Public Engagement & Education (Signage)
https://www.dec.ny.gov/energy/109181.html	\$10,000-\$2,000,000	50% Match	July 27, 2018, recurring annually	Climate Adaptation
https://www.transportation.gov/buildgrants/build-nofo	up to \$25,000,000		July 18, 2018, recurring annually	Transportation Planning
https://www.dot.ny.gov/programs/stip				Transportation Planning